NATURAL

Natural

SYSERR Utility

Version 5.1.1 for UNIX and OpenVMS

software AG

This document applies to Natural Version 5.1.1 for UNIX and OpenVMS and to all subsequent releases. Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

Table of Contents

SYSERR Utility - Overview

When you develop a Natural application, you may want to separate error or information messages from your Natural code and manage them separately. This makes it easy for you, for example, to standardize messages, to have predefined message ranges for different kinds of messages, to translate the messages into another language or to attach a long text to a message, which explains it in more detail.

With SYSERR, you can write your own application-specific messages. In addition, you can modify the texts of the existing Natural system messages; this is not recommended, however, because with new Natural releases these modifications will be lost.

Select any of the following topics:

General Information on Messages	Message types and languages.
Invoking SYSERR	Starting the SYSERR utility.
Direct Commands	Direct commands for specifying settings and executing SYSERR functions.
Parameters	Parameters provided with SYSERR functions, such as, message types.
Functions	SYSERR functions available for creating and maintaining messages.
Upper Case - ERRUPPER	Converting messages from lower to upper case.
Replacing Characters - ERRCHAR	Replacing characters in message texts.
Generating Message and Text Files	Creating or recreating text files and generating message modules.
User Exit USR0020P	Reading messages from Natural system files.

General Information on Messages

- Message Types
- Message Languages
- Which Messages Do You Receive?

Message Types Texts

There are two types of messages:

- Natural system messages which are stored in the system file FNAT and which are not attached to libraries, and
- User-defined messages which are stored in the system file FUSER or FNAT and which are attached to libraries (including SYS-libraries).

There are four types of message texts which can be created and maintained with SYSERR:

- Natural (system) short message
- Natural (system) long message
- User-defined short message
- User-defined long message

A short message is the one-line message which is displayed in the message line when the corresponding error situation occurs.

A long message is a detailed explanation of the corresponding short message.

To invoke a user-defined short message in a Natural program

- Issue the statement "REINPUT *nnnn*", where *nnnn* is the number of the requested message.
  Or issue the statement "INPUT WITH TEXT *nnnn*" statement where *nnnn* is the message number.

Message Languages

Messages can be created in up to 60 languages.

The following rules and restrictions apply:

- Natural short messages must be entered in English first, and can then be translated into any other language.
- Natural long messages can be entered in English, but cannot be translated into other languages.
- User-defined short messages can be entered in any language, and then translated to any other language.
- User-defined long messages can be entered in any language, but only if the corresponding short message already exists.

Which Messages Do You Receive?

Natural Short Messages

When a program issues a Natural short message, Natural looks for the requested message number on the system file FNAT in the following order:

1. under the current language code as determined by the system variable *LANGUAGE,
2. under Language Code 1 (English).

If neither of the above is found, you only receive the message number prefixed with NAT, for example, NAT0230.

User-defined Short Messages

When a program issues a user-defined short message, Natural first looks for the requested message number *nnnn* under the current language code as determined by the system variable *LANGUAGE (see the Natural Programming Reference documentation). If that message does not exist, Natural looks for the requested message number *nnnn* under Language Code 1 (English). If that message does not exist either, Natural looks for message number *n*000 (where *n* is the first digit of the requested message number) under Language Code 1.

These three search steps are first performed in the current library. If nothing is found there, further libraries are searched in the same way until a corresponding message is found.

The sequence of libraries for the search is as follows:

1. the current library as determined by the system variable *LIBRARY-ID,
2. the steplibs; if Natural Security is installed, the sequence in which the steplibs are specified in the Natural Security profile of the current library,
3. the default steplib as determined by the system variable *STEPLIB,
4. the library SYSTEM on the system file FUSER (*),
5. the library SYSTEM on the system file FNAT (*).

(*) If the name of the current library begins with SYS, SYSTEM FNAT is searched before SYSTEM FUSER.

Invoking SYSERR

To invoke the SYSERR utility

- Enter the system command SYSERR.

  The main menu of SYSERR is displayed:

```
11:18:52              ***** NATURAL SYSERR UTILITY *****             2000-07-04
                                    - Menu -

                  Code  Function
                  ----  ---------------------------------------
                   AD   Add new messages
                   DE   Delete messages
                   DI   Display messages
                   MO   Modify messages
                   PR   Print messages
                   SC   Scan in messages
                   SE   Select messages from a list
                   TR   Translate messages into another language
                   ?    Help
                   .    Exit
                  ----  ---------------------------------------
           Code .. __   Message type .... US
                        Library ......... SYSTEM__
                        Message number .. 1___ - 9999
                        Language codes .. 1________
 Please enter code.
 Command ===>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help        Exit                                                  Canc
```

From the main menu of SYSERR, you invoke all functions available for message maintenance. The individual functions are explained in the section Functions, the parameters in the section Parameters.

The SYSERR utility is equipped with an elaborate online help system. To obtain field-specific help information, either enter a question mark in this field and press ENTER or place the cursor in the field and press PF1.

Direct Commands

On the SYSERR main menu, you can enter the following direct commands:

Command	Function
EXPORT	Exports a message file and converts it into a text file. Note that you always need to specify the full path of a file. For further information on file formats and how to recreate a text file, see Message and Text Files. **From (message file/ application)**: The message file/application (library), from which the text file will be generated. User-defined messages: The default values entered in the export window are taken from the values entered in the fields Message Type, Library and Language Codes on the SYSERR main menu. The message file generated contains all messages, regardless of any range specifications. Natural system messages: Modify the default directory path (if desired) and the file name. The file name must be N*nn*L*mmmm*.MSG. **To (text file)**: The name of the text file that will be generated automatically.
IMPORT	Imports a text file and converts it into a message file. Note that you always need to specify the full path of a file. For further information on file formats and how to recreate a text file, see Message and Text Files. **From (text file)**: The name of the text file from which the message file will be generated. **To (message file/ application)**: The message file/application (library) into which the text file will be generated. User-defined messages: The default values entered in the import window are taken from the values entered in the fields Message Type, Library and Language Codes on the SYSERR main menu. The message file generated contains all messages, regardless of any range specifications. Natural system messages: The file name must be N*nn*L*mmmm*.MSG.
LAYOUT	Specifies valid message ranges to categorize messages. Overlapping of ranges is possible. A new message can only be added if its number is within the range defined in the layout.

Command	Function
NEXT	Searches for the next free message number within the message number range specified. Free means that this message number is available and has not yet been assigned to a message file in any language.
NEXTTAB	Same as NEXT, but returns a list of numbers from which you can select a certain number.
RESTART	Re-initializes SYSERR (and its default values) without leaving the application.
SAMPLE	Enables creation and modification of a sample message to be used as a master for creating short messages. If the string **0000** has been entered in the sample message, when copied, the string is replaced by the number of the new message. See also Copying a Sample Message in the section Functions. You can define one sample message for each library. If the library is specified as Natural, the sample applies to Natural system messages.
SHIFT	If activated, automatically shifts the text of a short message to the left margin when confirming a modification or adding a new message.
TRACE	Counts the number of database accesses. When the message number specified has been reached, a window is displayed. The default number is 900. If set to 0, the trace facility is shut off. The commands TRACE ON and TRACE OFF can be entered directly in the command line. TRACE ON sets the access counter to 900; TRACE OFF sets the access counter to 0.
USEREXIT	Invokes the program USEREXIT in the library SYSERR.

Parameters

To invoke a SYSERR function, on the SYSERR main menu, enter the code for the function desired and one or more of the parameters described below. Any restrictions which apply are mentioned in the explanations of the individual functions. See also the section Functions.

Below is information on:

- Message Type
- Library
- Message Number
- Language Codes

Message Type

Specifies the type of message to be processed. The table below lists the message types available.

Type	Explanation
NS	Natural short messages
NL	Natural long messages
US	User-defined short messages
UL	User-defined long messages

Library

Specifies the library for which messages are to be entered or maintained. Field contents are ignored when accessing Natural messages.

Message Number

Specifies the first and last number for the range. The maximum message number for a library is 9999. The message number 0000 is not allowed. To specify only one message number, either enter the number of the message in the left Message Number field and clear the right field, or enter the number in both fields.

Language Codes

Specifies a maximum of 9 from 60 available language codes. The language codes are single alphanumeric characters in the ranges 1 - 9, A - Z and a - y. To view or select language codes, enter a question mark (?) in the first position of the Language Codes field and press ENTER. For more information, see the system variable *LANGUAGE in the Natural Programming Reference documentation.

Functions

To invoke a SYSERR function, enter the relevant code on the SYSERR main menu and one or more parameters as described in the section Parameters.

The following functions are provided:

- Adding Messages
- Deleting Messages
- Displaying Messages
- Modifying Messages
- Printing Messages
- Scanning Messages
- Selecting Messages from a List
- Translating Messages into other Languages

Adding Messages

To add new messages

1. On the SYSERR main menu, enter the following values:

Field	Input Value
Code	AD
Message Type	NS Natural short messages NL Natural long messages US User-defined short messages UL User-defined long messages A long message can only be added if the corresponding short message already exists, as the long message is intended to be an explanation of the short message.
Library	Any existing Natural library. Not required for message types NS and NL.
Message Number	Two numbers of up to four digits corresponding to the first and last numbers of the range of messages to be added. If you only want to add one message, either enter the number of the new message in the left Message Number field and clear the right field, or enter the number in both fields.
Language Codes	The code of the language for which the message is to be defined. If the message type is NS or NL, the language code must be **1** for English. For other message types, the first language code entered in the field is used; all others are ignored.

2. Press ENTER.
   The Add Short Message screen is displayed:

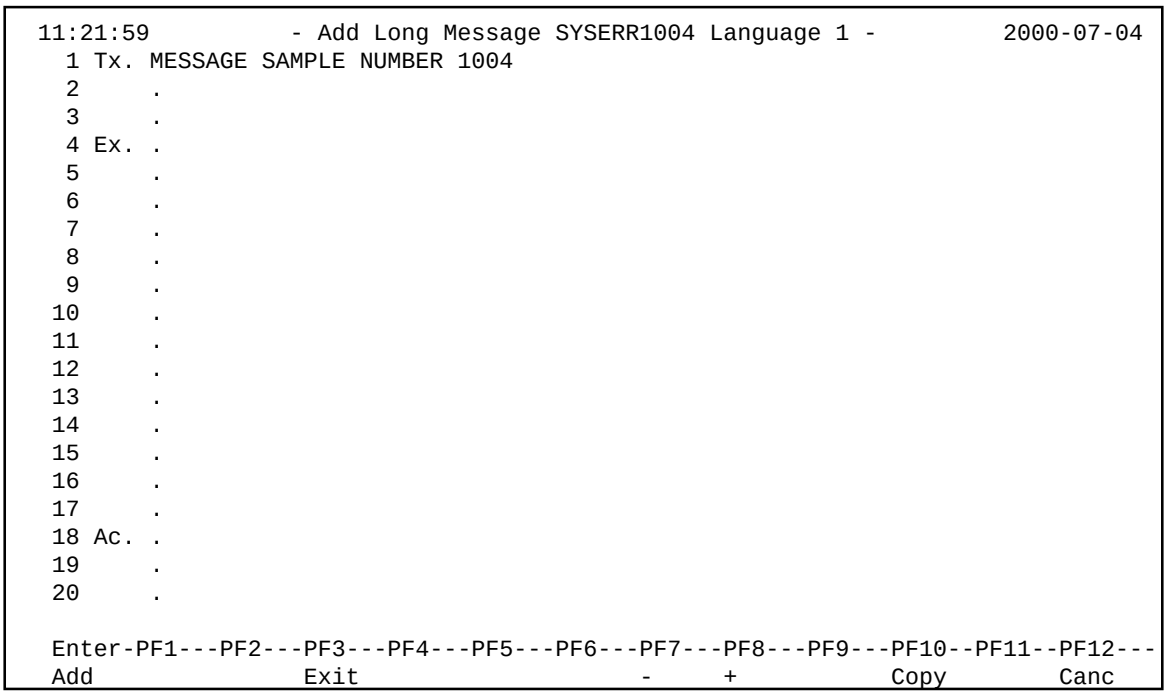
```
11:20:23              ***** NATURAL SYSERR UTILITY *****            2000-07-04
                             - Add Short Message -

Number        Short Message
------------  ------------------------------------------------------------
SYSERR1004
              ....+....1....+....2....+....3....+....4....+....5....+..

Sample ...... MESSAGE SAMPLE NUMBER 0000
```

3. Type in the message text to the right of the message number.
   If the text contains the string **0000**, the string is replaced by the message number when saving the message. See also Copying a Sample Message below.
4. Press ENTER to save the new short message.

5. Press PF9/Long to add a corresponding long message text.
   The Add Long Message screen is displayed:



```
11:21:59          - Add Long Message SYSERR1004 Language 1 -         2000-07-04
  1 Tx. MESSAGE SAMPLE NUMBER 1004
  2     .
  3     .
  4 Ex. .
  5     .
  6     .
  7     .
  8     .
  9     .
 10     .
 11     .
 12     .
 13     .
 14     .
 15     .
 16     .
 17     .
 18 Ac. .
 19     .
 20     .

 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
 Add               Exit                    -     +           Copy        Canc
```

6. Enter text in the three input areas: Tx. (text), Ex. (explanation) and Ac. (action).

7. Press ENTER to save the long message.

8. Press PF9/Short to return to the short message or to add the next short message in ascending order if you have selected a range of message numbers.
9. Press PF3 or PF12 to return to the SYSERR main menu.
   Or press PF8 or PF7 to add the next short message in ascending or descending order if you have selected a range of numbers.

Copying a Sample Message

Below the message input line, a line is displayed labeled Sample. The text contained in this line can be copied to the message input line by entering **.C** in the empty message input line.

If the sample message contains the string **0000**, this string is replaced by the message number when the sample is copied as illustrated in the example below.

```
11:21:13              ***** NATURAL SYSERR UTILITY *****             2000-07-04
                             - Add Short Message -

 Number        Short Message
 ------------  ------------------------------------------------------------------
 SYSERR1004    MESSAGE SAMPLE NUMBER 1004
               ....+....1....+....2....+....3....+....4....+....5....+..

 Sample ...... MESSAGE SAMPLE NUMBER 0000
```

See also the SAMPLE command as described in the section SYSERR Direct Commands.

Deleting Messages

To delete messages

- On the SYSERR main menu, enter the following values:

Field	Input Value
Code	DE
Message Type	NS Natural short messages NL Natural long messages US User-defined short messages UL User-defined long messages It is possible to delete a long message without deleting the corresponding short message, but not vice versa. If you try to delete a short message for which a long message exists, you are asked to confirm the deletion of both.
Library	Any existing Natural library. Not required for message types NS and NL.
Message Number	Two numbers of up to four digits corresponding to the first and last numbers of the range of messages to be deleted.
Language Codes	The code(s) of the language(s) in which the messages are to be deleted. To indicate that the specified messages are to be deleted in all available languages, enter an asterisk (*).

Displaying Messages

To display messages

1. On the SYSERR main menu, enter the following values :

Field	Input Value
Code	DI
Message Type	NS Natural short messages NL Natural long messages US User-defined short messages UL User-defined long messages
Library	Any existing Natural library. Not required for message types NS and NL.
Message Number	Two numbers of up to four digits corresponding to the first and last numbers of the range of messages to be displayed.
Language Codes	The code of the language in which the messages are to be displayed. Only one language code is accepted. If more than one code is specified, only the first one is used; all others are ignored.

2. Press ENTER.
   For short messages, a list of messages is displayed.
   Press PF8 to page forwards.
   For long messages, the messages are displayed one after another.
   Press PF7 or PF8 to page backwards or forwards respectively.

Modifying Messages

To modify messages

1. On the SYSERR main menu, enter the following values:

Field	Input Value
Code	MO
Message Type	NS Natural short messages NL Natural long messages US User-defined short messages UL User-defined long messages
Library	Any existing Natural library. Not required for message types NS and NL.
Message Number	Two numbers of up to four digits corresponding to the first and last numbers of the range of messages to be modified.
Language Codes	The code of the language in which the messages are to be modified. Only one language code is accepted. If more than one code is specified, only the first one is used; all others are ignored.

2. Press ENTER.
   The Modify Short Message screen is displayed:

```
11:23:09              ***** NATURAL SYSERR UTILITY *****             2000-07-04
                           - Modify Short Message -


 Number        Short Message (English)
 ------------  ------------------------------------------------------------
 NAT0001       Missing/invalid syntax; undefined variable name/keyword.
               ....+....1....+....2....+....3....+....4....+....5....+..


  1 Tx. Missing/invalid syntax; undefined variable name/keyword.
  2     .
  3     .
  4 Ex. The syntax checker detected an invalid statement name or
  5     keyword.  Probable cause is a misspelling of a statement name,
  6     keyword or variable name, or an error in a sub-clause of the
  7     previous statement.
  8     .
 18 Ac. Correct Error.
 19     .
 20     .

 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
 Mod               Exit                    -     +           Copy        Canc
```

   For reference purposes, the long message is displayed in the bottom half of the screen.

When you modify long messages, the following screen is displayed:

```
11:23:42      - Modify Long Message NAT0001 (English) -             2000-07-04
  1 Tx. Missing/invalid syntax; undefined variable name/keyword.
  2     .
  3     .
  4 Ex. The syntax checker detected an invalid statement name or
  5     keyword.  Probable cause is a misspelling of a statement name,
  6     keyword or variable name, or an error in a sub-clause of the
  7     previous statement.
  8     .
  9     .
 10     .
 11     .
 12     .
 13     .
 14     .
 15     .
 16     .
 17     .
 18 Ac. Correct Error.
 19     .
 20     .

 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
 Mod               Exit                    -     +           Copy        Canc
```

3. Press ENTER to save modifications.
4. Press PF8 or PF7 to modify the next message in ascending or descending order if you have selected a range of numbers.

Printing Messages

To print messages

1. On the SYSERR main menu, enter the following values:

Field	Input Value
Code	PR
Message Type	NS Natural short messages NL Natural long messages US User-defined short messages UL User-defined long messages
Library	Any existing Natural library. Not required for message types NS and NL.
Message Number	Two numbers of up to four digits corresponding to the first and last numbers of the range of messages to be printed.
Language Codes	The code of the language in which the messages are to be printed. Only one language code is accepted. If more than one code is specified, only the first one is used; all others are ignored.

2. Press ENTER.
   The print window is displayed:

```
+------Print NATURAL System Messages-------+
 !                                          !
 !   Language code .... 1                   !
 !                                          !
 !   Long texts, too .. N                   !
 !   Error number ..... 1___ -  25          !
 !   Lines per page ... 60_                 !
 !   Left margin ...... 10                  !
 !   Top margin ....... 0_                  !
 !   Bottom margin .... 0_                  !
 !   Printer ID ....... PRT1____            !
 !                                          !
 !                                          !
 +------------------------------------------+
```

3. Specify the options provided in the print window and the logical printer name.
   See the DEFINE PRINTER statement in the Natural Statements documentation for details on logical printer names.
4. Press ENTER to output the selected messages on a printer.

To print all Natural system messages

- Enter Code PR,
  Message Type NS or NL,
  Message Numbers 1 - 9999,
  and Language Code 1 (English) or 2 (German).
  A Library name is not required and possible entries are ignored.

Scanning Messages

This function is used to scan messages for a specific string of characters. Only short messages can be scanned.

To scan messages

1. On the SYSERR main menu, enter the following values:

Field	Input Value
Code	SC
Message Type	NS Natural short messages US User-defined short messages
Library	Any existing Natural library. Not required for message type NS.
Message Number	Two numbers of up to four digits corresponding to the first and last numbers of the range of messages to be scanned.
Language Codes	Specify a maximum of nine language codes from the ranges 1 - 9, A - Z and a - y, or specify an asterisk (*).

2. Press ENTER.
   The scan window appears (see the Example below).
3. Specify the following:

Scan Value(s)	In the four empty fields, enter up to four terms to be searched for. The scan finds the specified terms in both upper and lower case.
OR/AND/NOT	You can vary the conditional operators OR, AND or NOT between the search terms. In the Example below, the search would be for all short messages which contain both the words "buffer" and "pool". If the operator NOT were specified, then the search would find all messages which contain neither the word "buffer" nor the word "pool".
Absolute	If you mark this field, the string of characters is found even if it is part of a larger string in the message text. For example, if you scan for the value "meter", the search would also find words, such as "parameter" and "millimeter".
Immediate	If you mark this field, messages are displayed individually, one after the other. Otherwise, a list of messages is displayed after the search is completed. If you specify more than one language or an asterisk (*) in the Language Codes field, Immediate must be marked.

Example:

```
+-------------------------------------+
 !   Scan value(s)       Or/And/Not    !
 !   ----------------    ----------    !
 !   BUFFER_____________       AND     !
 !   POOL_______________               !
 !   _________________                 !
 !   _________________                 !
 !                                     !
 !   Absolute ..... X                  !
 !   Immediate .... _                  !
 !                                     !
 +-------------------------------------+
```

4. Press ENTER.
   When found messages are displayed, the word in which the search string is found is displayed in intensified form. Displayed below is an example output of a scan:

```
 11:32:27              ***** NATURAL SYSERR UTILITY *****             2000-07-04
                            - Scan in Short Messages -

  Number        Short Message (English)
  ------------- ------------------------------------------------------------------
  NAT0777       Buffer pool full.
```

   From this screen, you can display the search criteria for the current scan by pressing PF10.

Selecting Messages from a List

This function is used to display a range of messages and select single ones for further processing. Only short messages can be displayed.

To select messages

1. On the SYSERR main menu, enter the following values:

Field	Input Value
Code	SE
Message Type	NS Natural short messages US User-defined short messages
Library	Any existing Natural library (not required for message type NS). If an asterisk (*) is appended to the library name, instead of selected messages being displayed, a list of available libraries is displayed for selection.
Message Number	Two numbers of up to four digits corresponding to the first and last numbers of the range of messages to be displayed for selection.
Language Codes	The code of the language in which the messages are to be displayed. If more than one code is specified, only the short message text of the first one is displayed. Enter an asterisk (*) to display available languages for each message.

2. Press ENTER.
   The Select Messages screen is displayed:

```
 11:33:21             ***** NATURAL SYSERR UTILITY *****              2000-07-04
                                - Select Messages -
                                                                    Languages
  Se Number       Short Message (English)                           short     long
  -- ------------ ------------------------------------------------- --------- ----
  __ NAT0001      Missing/invalid syntax; undefined variable name/ 1         1
  __ NAT0002      No file is available with specified name or numb 1         1
  __ NAT0003      Invalid character string for file name or file n 1         1
  __ NAT0004      DEFINE DATA must be the first statement if prese 1         1
  __ NAT0005      Closing parenthesis missing in arithm/logical ex 1         1
  __ NAT0006      ESCAPE statement used when no processing loop ac 1         1
  __ NAT0007      Invalid THRU clause in READ LOGICAL/HISTOGRAM st 1         1
```


3. In the column **Se**, enter any of the following line commands:

Command	Function
DE	Delete the message.
DI	Convert to display mode and display all messages.
LA	Show into which languages the message has been translated.
MO	Modify the message.
PR	Output the message to a printer.
SH	Display the short message; only available when an asterisk (*) is specified in the Language Code field.
TR	Translate the message into another language.
.X	Redisplay messages, placing this message at the top of the list. The first message number of the range displayed on the main menu is set to the number of this message.
.Y	Redisplay messages, eliminating all messages following this message. The last message number of the range displayed on the main menu is set to the number of this message.

4. Press ENTER to continue.

Translating Messages into other Languages

This function is used to display short messages for translation from one language to one or more other languages. To translate long messages into another language, use the Add Long Messages function. A Natural short message can only be translated into another language if it exists in English.

To translate messages

1. On the SYSERR main menu, enter the following values:

Field	Input Value
Code	TR
Message Type	NS Natural short messages US User-defined short messages
Library	Any existing Natural library (not required for message type NS).
Message Number	Two numbers of up to four digits corresponding to the first and last numbers of the range of messages to be displayed for selection.
Language Codes	Specify a maximum of nine language codes. The language codes are single alphanumeric characters in the ranges 1 - 9, A - Z and a - y.

2. Press ENTER.
   The Translate Short Message screen is displayed:

```
11:42:21             ***** NATURAL SYSERR UTILITY *****              2000-07-04
                          - Translate Short Message -

 Number ...... SAG0002
 Languages ... 123...7.9ABCD.........................................

 ------------ ....+....1....+....2....+....3....+....4....+....5....+..
 English      Short message number 2_____________________________________
 German       Short message number 2 (German)_____________________________
 French       Short message number 2 (English)_____________________________
 Spanish      _____________________________________________________________
 Italian      _____________________________________________________________
 Dutch        _____________________________________________________________
 Turkish      Short message number 2 (Turkish)_____________________________
 Danish       _____________________________________________________________
 Norwegian    Short message number 2 (Norwegian)___________________________
 ------------ ....+....1....+....2....+....3....+....4....+....5....+..

  1 Short message number 2
  4 Line 4 of message number 2 (long text, English)
 18 Line 18 of message number 2 (long text, English)

 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
 Mod   Help        Exit                   -     +           Opts        Canc
```

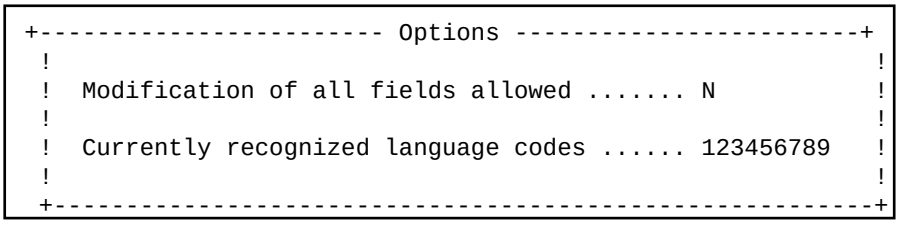

Near the top of the screen, the message number and the codes of the languages in which the message already exists are displayed (in the example above: 1, 2, 3, 7, 9, A, B, C and D). This information is followed by input lines for translating the message into the languages which were specified in the Language Code field of the main menu when the function was invoked (in the example above: 1, 2, 3, 4, 5, 6, 7, 8 and 9).
For reference purposes, three lines of the corresponding long message are displayed at the bottom of the screen. The language code of this message is always the one of the first message appearing in this screen (in the example above, English). Lines 1, 4 and 18 are displayed by default. You can display any other line of the long message by overtyping any of the three line numbers (1, 4,18) with another line number and pressing ENTER.

3. Enter the translation in the input line of the new language specified.
4. Press ENTER.

Already existing translations are non-modifiable by default.

To modify existing translations

1. On the Translate Short Message screen, press PF10.
   The Options window is displayed:



2. In the field Modification, enter **Y** to override the default.
   In this window, you can also specify up to nine new language codes for translation.

To copy an existing translation to any empty line in the screen

1. At the beginning of the empty line, enter **.C**.
2. Move the cursor to the line to be copied.
3. Press ENTER.

Upper Case - ERRUPPER

Upper Case - ERRUPPER

Natural system messages are provided in lower case. If your terminals cannot display lower-case characters correctly, convert the messages from lower to upper case by executing the program ERRUPPER in the library SYSERR. Once the messages have been converted to upper case, however, you cannot convert them back to lower case. To recover lower-case messages, you have two options:

- Reload the messages with the SYSTRANS utility.
- Unload the lower-case messages to a free language code using the SYSTRANS utility before conversion so that a backup always exists.

See also the Natural SYSTRANS Utility documentation.

Replacing Characters - ERRCHAR

Replacing Characters - ERRCHAR

If your terminal does not display certain characters correctly, it is possible to search for these characters and replace them with new characters of your choice. This is done by executing the program ERRCHAR in the library SYSERR. However, it is only possible to replace characters in Natural short messages. Using ERRCHAR, you scan for a specific character and replace the hexadecimal code that represents this character with another hexadecimal code.

When the program ERRCHAR is run, a menu with the following functions is displayed:

- Scan for a given character
- Scan and Replace characters
- Display one message in hexadecimal format
- ASCII character table
- Translate using character set ERRCSET

The following input fields are provided on the ERRCHAR menu:

Field	Description
Error Number	The range of messages to be included in the search or search/replace operation.
Language Code	The language code of Natural short messages to be included in the search or search/replace operation.
Scan Value	The hexadecimal value to be scanned for.
Replace Value	The hexadecimal value to replace all scan values found. Use the function "ASCII character table for your terminal" to determine which characters your terminal can represent.

Generating Message and Text Files

Message modules are created and maintained with the import and export functions of the SYSERR utility. They are generated from text files and stored as message files with the file extension .MSG in operating system directories.

User-defined messages are stored in the subdirectory ERR of the library on the FNAT or FUSER system file from which the application is executed, the steplib, or the library SYSTEM.

For Natural system messages, the message modules must be located in the subdirectory ERR in the Natural root directory. Natural system messages are stored in eight message modules.

Below is information on:

- Creating Text Files
- Generating a Message Module
- Recreating Text Files

Creating Text Files

For Natural system or user-defined messages, the import function of SYSERR generates a message module from one text file.

To create such a text file, you must use a specific layout, as shown in the following example:

Example:

```
NAT
0010
0100
0010E NO MESSAGE TEXT DEFINED!
0020E MISSING/INVALID SYNTAX; UNDEFINED VARIABLE-NAME.
0025E ERROR IN ENTRY FOR NUMBER OF RECORDS TO BE PROCESSED.
0050E INCORRECT FIELD SPECIFICATION IN 'WHERE' CLAUSE.
#PLEASE CHECK PROGRAM
#FOR ERRORS
0100E FUNCTION NOT AVAILABLE.
```

Explanation:

NAT	Group ID (library name) and prefix for the number that will be displayed with the message. It can have up to eight characters.
0010	Four-digit starting number of the range of messages.
0100	Four-digit ending number of the range of messages. All error numbers that are defined in this text file must be within this range.
0010E	NO MESSAGE TEXT DEFINED. This is the message for error number 0010. The **E** is mandatory and means "error". This message will be issued with the statement "REINPUT *0010". Explanatory long texts must be placed immediately below this message; each of these additional lines must start with a hash/number (#) sign. Up to 20 additional lines are allowed.

Generating Message Modules

Once the text files have been created, you can generate a message module from the text files with the SYSERR utility.

For user-defined messages, one output error file can be created in one language for each library. Each error file must be in the ERR subdirectory of that library.

Naming Conventions

For user-defined messages, the name of the message file must be:

N*nn*APMSL.MSG,

where *nn* is the language code (01 - 60), for example 01 for English.

For Natural system messages, the name of the message file must be:

N*nn*L*mmmm*.MSG,

where *nn* is the language code to be used and *mmmm* the starting number of the message range.
The ranges of message numbers are fixed, as defined during Natural system installation, for example:

N01L0000	Messages 1 - 1999
N01L2000	Messages 2000 - 2999

To generate a message text file

1. Enter the IMPORT command of the SYSERR utility.
   The "Import Text File to Message File" dialog box is displayed.
2. In the From input field, specify the name of the input text file from which all information is to be read.
   The full path name of the file must be specified.
   In the To input fields, specify the language and the library of the output error file to be generated.

Recreating Text Files

With the SYSERR utility, you can also recreate a text file for message text maintenance. This is done by reconverting an error messages module into a sequential text file.

To recreate a message text file

- Enter the EXPORT command of the SYSERR Utility.
  The "Export Text File from Message File" dialog box is displayed.
- In the From input fields, specify the language and the library of the message(s) to be used as input.
  In the To input field, specify the name of the text file to be created.
  The text file created will have the same format as an input text file.

User Exit USR0020P

The user exit program USR0020P in the library SYSEXT is provided to read messages from the FNAT or FUSER system file. Thus, it is possible, for example, to have long messages displayed in an application (as part of your own user-defined help system) without having to use the library SYSERR.

Log on to the library SYSEXT and enter the command MENU. On the list provided, mark the program USR0020P with a question mark (?); a window is displayed, on which you can select the function to be executed for the program. If you enter an **I**, detailed information on the use of USR0020P is displayed.

